

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES AND ENERGY
DIVISION OF OIL, GAS AND MINING
4241 State Office Building
Salt Lake City, Utah 84114
Telephone: (801) 533-5771

RECEIVED

AUG 2 1984

DIVISION OF OIL
GAS & MINING

NOTICE OF INTENTION TO COMMENCE MINING OPERATIONS
and
MINING AND RECLAMATION PLAN

Based on Provisions of the Mined Land Reclamation Act, Title 40-8, Utah Code Annotated 1953, General Rules and Regulations and Rules of Practice and Procedures, By Order of the Board of Oil, Gas and Mining.

Mine Name: Little Mountain Quarry Mine Plan Date: Aug 1, 1984
File No.: ACT/ 045 / 005 Date Received: _____
Operator: Utah Portland Quarries, Inc. DOGM Lead Reviewer: _____
Mineral(s) to be Mined: Limestone and Shale

Please attach other sheets as needed and include cross-reference page numbers when used.

1. Name of Applicant or Company: Utah Portland Quarries, Inc.
Corporation () Partnership () Individual ()
2. Address: Permanent: P.O. Box 1469
Salt Lake City, Utah 84110
Temporary: _____

3. Company Representative: Name: Tom Saunders
Title: Plant Manager
Address: P.O. Box 1469, SLC, UT 84110 Phone: (801) 328-4891
4. Location of Operation: County(ies) Tooele
Township(s): 2S Range(s): 6W Section(s): E 1/2 20
Township(s): _____ Range(s): _____ Section(s): _____
Township(s): _____ Range(s): _____ Section(s): _____
5. Owner(s) of record of the surface area within the land to be affected:
Name: Utah Portland Quarries, Inc. Address: P.O. Box 1469, SLC, UT 84110
Name: _____ Address: _____
Name: _____ Address: _____
Name: _____ Address: _____

6. Owner(s) of record of the minerals to be mined:

Name:	Utah Portland Quarries, Inc.	Address:	P.O. Box 1469, SLC, UT 84110
Name:	_____	Address:	_____
Name:	_____	Address:	_____
Name:	_____	Address:	_____

7. Owner(s) of record of all other minerals, including oil and gas, within any part of the land to be affected:

Name:	None	Address:	_____
Name:	_____	Address:	_____
Name:	_____	Address:	_____

8. Have the above owners been notified in writing? () Yes, () No. If no, why not? N/A

9. Have you or any other person, partnership or corporation associated with you received an approval of a Notice of Intention to Commence Mining Operations by the State of Utah for operations other than described herein? () Yes, (x) No. If yes, list all approval numbers now under surety:

_____	_____	_____
_____	_____	_____
_____	_____	_____

10. Source of Operator's legal right to enter and conduct operations on the land to be covered by this Notice:

Patented Claims: Alpha No.3 - SE $\frac{1}{4}$ SEC.20
 Lots 1 and 2 - NE $\frac{1}{4}$ SEC .20
 Lots 6 and 7 - 5 $\frac{1}{2}$ SE $\frac{1}{4}$ Sec.17

11. Give the names and mailing addresses of every principal Executive, Office, Partner (or person performing a similar function) of Applicant:

	Name	Title	Address
A.	E. S. Gallagher	President	P.O. Box 1469, SLC, UT 84110
B.	Ashby S. Decker	Vice President	P.O. Box 1469, SLC, UT 84110
C.	_____	_____	_____
D.	_____	_____	_____

12. Has the Applicant, any subsidiary or affiliate or any person, partnership, association, trust or corporation controlled by or under common control with the Applicant, or any person required to be identified by Item 11 ever had an approval of a Notice of Intention to Mine or Explore withdrawn or has surety relating thereto ever been forfeited? () Yes, (X) No.

If yes, please explain: _____

Please note: Section 40-8-13 of the Act provides that information relating to the location, size or nature of the deposit, and marked confidential by the Operator, shall be protected as confidential information by the Board and the Division and not be a matter of public record in the absence of a written release from the Operator, or until the mining operation has been terminated as provided in Subsection (2) of Section 40-8-21 of the Act. This material should be so marked and included on separate cross-referenced sheets.

13. All maps and plans prepared for submission shall be of adequate scale and detail to show topographic features and clearly indicate the following details:

(See Maps 1 and 2 for detailed locations)

- A. Location and delineation of the extent of the land previously affected, as well as the proposed surface disturbance.
- B. Existing active or inactive, underground or surface mined areas.
- C. Boundaries of surface properties, including ownership.
- D. Names and locations of:
 - (1) Lakes, rivers, streams, creeks and springs.
 - (2) Roads, highways and buildings.
 - (3) Active or abandoned facilities.
 - (4) Transmission lines within 500 feet of the exterior limits of land affected. (None)
 - (5) Gas and/or oil pipelines. (None)
 - (6) Site elevation.
- E. Drainage patterns of land affected:
 - (1) Overburden or topsoil removal and storage areas.
 - (2) Areas susceptible to erosion.
 - (3) Natural waterways.
 - (4) Constructed drainages, diversions, berms and sediment ponds (design calculations shall be included). (None)
 - (5) Receiving waters (State Health classification). (None)
 - (6) Directional flow of all surface waters (indicated by arrows).
- F. Known drill holes:
 - (1) Location.
 - (2) Status.

- (3) Depths and thicknesses of:*
- Water bearing strata.
 - Mineral deposits.
 - Toxic or potentially toxic materials. (None)
 - Surficial or plant supporting material (topsoil and subsoil).

G. Locations of disposal and stockpile areas:

- Topsoil and subsoil storage areas.
- Overburden storage area.
- Waste, tailings, rejected materials.
- Raw ore stockpile(s).
- Tailings-ponds and other sediment control structures. (None)
- Discharge points, water effluents (see #15[D]). (None)

All maps should have a color code or other suitable legend used in preparation to clearly indicate surface features of the land affected. A general reference map completed on a 7.5 (1:24,000) USGS quadrangle sheet is recommended with additional large scale maps included for practical delineation of individual facilities, (e.g., 1:200, 1:500).

14. Acreage to be disturbed:

- A. Minesite (operating, storage, disposal areas, etc.): 20
- B. Access/haul roads/conveyors: 1
- C. Associated on-site processing facilities: 1

15. Describe mining method to be employed, including:

A. Mining sequence:

- Map delineating the yearly sequential disturbance (if surface mine) and/or surficial disturbance.
- Narrative (including on-site processing or mineral treatment):

- (1) See Map 2 Limestone is drilled/blasted. Rock is hauled by front end loader to 2-stage crushing system for reduction to 2" dia. Material is stockpiled by conveyor. Watersprays are used to control dust during crushing and transport. Trucks loaded by front end loaders.
- (2) 1984-87 Produce about 250,000 tpy crushed limestone by open pit methods with nominal 40' benches, approx 75,000 tpy of shale will be open pit mined also.
- 1988-94 Produce about 350,000 tpy crushed limestone by open pit methods with nominal 40' benches approx 150,000 tpy of shale will be open pit mined also.
- Attach supplemental sheets and/or diagrams as necessary with cross reference to page number here: Map 2.

*Stratigraphic or lithologic logs if correlated to footage depths may be presented when labeled (maps or logs should be labeled confidential, if so desired).

(No logs available)

- B. If sedimentary deposit seam(s):
(1) Thickness(es): 800' ±
(2) Dip: 45 - 60° NW
(3) Outcrop: Mississippian Age - Great Blue Limestone/Manning Canyon Shale
- C. Will any underground workings or aquifers be encountered? () Yes, () No. If yes, describe potential impacts and protection measures to be taken: No underground workings will be encountered. Groundwater aquifers are not expected to be encountered.* All mining will be done above any aquifers to facilitate operations. Water table is reported at approx 400' in area.

- D. Describe any active discharge or proposed discharge of water from mine or site area. Include water quality data and lab test reports. If attached sheets or reports are included, cross reference to page number here: None.

16. Have all necessary water rights been appropriated? () Yes, () No. How will water be obtained? Please explain: N/A no water required except that brought in by truck for dust control
17. Proposed or estimated duration of mining operation: 30 yrs on a 3-6 mos/yr mining
Will the permit term be for a lesser amount of time, subject to review? campaign basis
(e.g., for surety estimate reasons). (x) Yes, () No. If yes, how long?
10 years
18. Describe the construction and maintenance of access roads including:
A. Procedures (drainage and erosion control methods).
B. Cross section(s).
C. Profile(s) of proposed road grade(s).

N/A - Dirt road used for access to mining operation existed and was in use prior to mining for access to several canyons (see Map 1). Road has been graded and will be maintained during mine operation. When mining ceases, road will be left open for continued use as previously served.

Attach supplemental diagrams and cross reference to page number here: Map 1.

19. Prior land use(s): Wildlife/grazing
Current land use(s): Quarrying/grazing
Possible projected or prospective future land use(s): grazing

* Available reports (V. Hansen 1980), indicate low potential for groundwater presence due to nearby syncline and Manning Canyon shale barrier.

20. Describe methods of tree and brush removal: Dozer, loader, grader

Provide estimate of, and method of obtaining existing vegetation cover (%):

Approx 30% of area covered by sparse vegetation based on field survey using 15 min topog map

What types of dominant vegetation are present? Each by approximate amount:

Sagebrush 75%, Utah Juniper 15%, misc grasses 10%

Photographs and/or maps may be attached to these forms, cross reference to page number here: Photo Plate 1-3

21. Soils (surficial plant supportive material) and overburden: Except where slope or rocky terrain make it impossible, all surficial materials suitable as a growth medium shall be removed, segregated and stockpiled according to its ability to support vegetation (as determined by soil analysis and/or practical revegetation experience) prior to any major excavation. (Suggested minimum requirements are the top six inches, or the "A" horizon, whichever is larger.)

A. What is the pH range of the soil before mining? 7.9 - 8.2

Name of person or agency and method of determining pH: _____

UBTL, Inc. SLC, US EPA Method 3.2.2

Attach lab report if available. Cross reference page number here: Appendix (see Map 2 for location of soil samples)

B. Average depth of topsoil and subsoil to be stripped and stockpiled:

0 - 6 inches*

Calculated volume of soil to be stockpiled: 4300 cu yards

C. Describe the method for removing and stockpiling topsoil and subsoil, including measures to protect topsoil from wind and water erosion, compaction and pollutants: Removal by dozer and front end loader. Top soil to be stockpiled, compacted, rounded and covered with crushed limestone for protection against erosion.

D. Describe the method for removing and stockpiling overburden.

Describe and discuss the acidity or alkalinity (pH) or other characteristics which would affect revegetation: _____

(a) Dozer and loader

(b) No negative effect from soil as chemistry anticipated, if native vegetation used. Amount of native topsoil will be limited.

* Thickness of very limited topsoil is variable due to exposed bedrock in mine area. Also the small quantity of topsoil that existed over area now being mined was not stockpiled.

- E. Rock subjected to processing such as waste rock, tailings, etc., and which is to be disposed of on- or off-site must be subjected to a toxicity analysis. The method of determination, results and suitable disposal methods must be explained in detail, including means for containment and long range stability*:

Minor quantities of overburden exist due to limestone exposure at the surface. Any low grade limestone material will be stockpiled and removed from the mine area. During reclamation this material will be replaced and spread into and around the mined areas. This material is not toxic.

22. Describe the methods used to minimize public safety and welfare hazards during and after mining operations including:

- A. Shaft, tunnel and drill hole closure.
- B. Disposal of trash, scrap metal and wood and extraneous debris, waste oil and solvents, unusable buildings and foundations, sewage and other materials incident to mining.
- C. Posting of appropriate warning signs and/or fences or berms to act as barriers (e.g., above highwalls) in locations where public access is available.
- A. N/A - No shafts, tunnels or adits exist at the site. Existing drill holes (4) on the property are caved and plugged. Should new holes be drilled, they would be properly plugged after use. No underground mining operations are planned.
- B. Trash, scrap metal, misc. debris, waste oil/solvents will be collected and hauled from the site for proper landfill disposal. Sewage will be collected by portable chemical toilets. No permanent buildings or structures will be constructed at the site.
- C. Signs will be posted at key locations to warn the public and workers of potential dangers, i.e., at access road entry, quarry area, crushing/loading area and equipment storage/use area. Proper signs will be installed upon mine closure to warn the public of potential dangers.

*"Toxic" means any chemical or biological or adverse characteristic of the material involved which could reasonably be expected to negatively affect ecological or hydrological systems or could be hazardous to the public safety and welfare.

23. Grading and soil redistribution.

- A. Attach pre- and postmining contour cross sections, typical of regrading designs. Cross reference to page number here: _____.
- B. Describe the method(s) of overburden replacement and stabilization and highwall elimination, including: (a) slope factors; (b) lift heights; (c) compaction; (d) terracing, etc., (e) also include testing procedures: _____
- A. See Map 2. Regrading will be done to restore natural grade where possible around quarry but will not be feasible in mined-out area due to size of excavation and lack of sufficient topsoil (Request Variance) _____
- B. (a-d) Highwall will not be eliminated due to resultant high slope stability of adjacent remaining rock. (Reference is made to other abandoned quarries in area.) During mining nominal 40' benches will be used. Post mining highwall slope will remain near 45°. (e) If required, slope testing procedures (seismic) and/or slope indicator measurements can be used on a periodic basis to check for potential slope failures. _____
- C. What method of spreading topsoil and subsoil or upper horizon material on the regraded area will be employed? _____
Dozer and front end loader. _____

1. Indicate the approximate depth of soil cover after final surfacing 0 - 6 inches.
2. What tests will be performed to adequately evaluate the potential of the soil to successfully support intended revegetation? When required after mine closure, chemical "growability" tests for Ca, Mg, Na, Cond, and pH will be performed
3. What soil amendments or fertilizers will be needed as an aid to revegetation?
Type: will be determined at time Rate: _____
Type: of vegetation as necessary Rate: _____
Type: _____ Rate: _____
4. What additional surface preparations will be used? Describe (a) drainage, erosion and sediment control measures; (b) maximum slope characteristics; and (c) highwall reclamation.

N/A - No reclamation is planned for the highwall since it will be solid rock. Limited overburden will be reclaimed, spread and compacted and covered with stockpiled topsoil in the areas around the mine-out zones. Both overburden and topsoil quantities are limited.

5. Describe methods which may be particularly applicable to waste disposal areas determined to be potential problem areas.

No overburden material will be disposed of off-site. Low grade rock materials will be stockpiled on-site for future reclamation. No wastes will be generated.

- D. Describe plans for either leaving or reclaiming the roads and pads associated with the operation.

Main access road will not be reclaimed thus providing access to the vicinity as provided prior to mining at Little Mt. Pad areas will be reclaimed by applying overburden and suitable topsoil as available and revegetating with appropriate plants. Local site mine roads will be reclaimed by scarifying, covering with topsoil and revegetating.

24. Impoundments: All evaporation, tailings and sediment ponds; spoil piles, fills, pads and regraded areas shall be self-draining and nonimpounding when abandoned unless previously approved as an impounding facility by a lawful state or federal agency. In view of this, please describe the reclamation of all related areas in the operation and include pertinent items enumerated in C, 1-5 above.

No evaporation, tailings or sediment ponds are planned for the mine area. Spoil piles, fills, pads and regraded areas shall be constructed as free draining and nonimpounding due to the coarse, crushed nature of the materials. Such areas will be reclaimed as required. Some natural drainages exist on the site that do show erosion potential. However, these areas will not be disturbed by any mining activity.

25. Revegetation plans:

- A. What organization, agency or person will specifically be performing the revegetation? Utah Portland Quarries Inc. and U.S. Soil Cons. Service
- B. Will the affected area be subject to livestock or wildlife grazing? ☐ Yes, ☐ No. Will vegetation protection be needed to allow for a determination of the successful revegetation criteria outlined in the Mined Land Reclamation Act, Rule M-10(12)? ☐ Yes, ☐ No. If yes, what measures will the operator take?

UPQ will work closely with DOGM to ensure regulations are met.

- C. Will irrigation be used? ☐ Yes, ☒ No. Type: _____
_____ For how long? _____.

- D. Test plots initiated during the early stages of mine development provide good bases from which a successful revegetation program can be adapted for later implementation. Will test plots be employed?
() Yes, (☒) No. If yes, describe on an additional sheet(s) and attach. Cross reference page number here and show location on facilities map: _____.
- E. Please attach a revegetation plan and schedule including:
1. Species to be used.
 2. Rate of seed application/acre.
 3. Season to be planted.
 4. Seedbed preparation techniques.
 5. Planting location, slope face direction, variability, method of application, covering, etc.
 6. Mulch and fertilizer application, if used.
- F. Describe any other maintenance procedures which may be used, if needed, to guarantee successful revegetation:

Items E & F - N/A at present. Information will be provided at completion of mining operation.

26. Please provide a reclamation schedule including:

- A. Estimated time for construction.
- B. Estimated time for interim reclamation.
- C. Estimated duration of the mining operation.
- D. A time table for the accomplishment of each major step in the reclamation plans. Attach the schedule and cross reference to the page number here: Complete reclamation schedule will be estimated and submitted upon mine closure.

27. A surety guarantee must be provided for the mining operation (see Rule M-5 Mined Land Reclamation Act). In calculating this amount, the Division will consider the following major steps based on the information provided in this report:

- A. Clean up and removal of structures.
- B. Backfilling, grading and contouring.
- C. Topsoil and subsoil redistribution and stabilization.
- D. Revegetation (i.e., preparation, seeding, mulching, irrigation).
- E. Labor.
- F. Safety and fencing. (Signs)
- G. Monitoring, and reseeding if necessary. (assume 50% reseeding necessary)

To assist the Division, the operator may attach a list of costs and factors which would satisfy these areas. Substantiation of these factors, i.e., unit costs and how they are derived, should accompany the list. Cross reference the page number here: Table 1.

28. A request for a variance from specific commitments to Rule M-10 (Reclamation Standards) of the Mined Land Reclamation Act may be submitted with adequate written justification. If after presentation of information adequately detailing the situation, a determination is made that finds a portion of the rule inapplicable, a variance may be granted by the Division.

I hereby commit the applicant to comply with Rule M-10, "Reclamation Standards" in its entirety, as adopted by the Board of Oil, Gas and Mining on March 22, 1978.

The applicant will achieve the reclamation standards for the following categories as outlined in Rule M-10 on all areas of land affected by this mine, unless a variance is granted in writing by the Division.

<u>Rule</u>	<u>Category of Commitment</u>	<u>Variance Requested?</u>
M-10(1)	Land Use	
M-10(2)	Public Safety and Welfare	
M-10(3)	Impoundments	X
M-10(4)	Slopes	X
M-10(5)	Highwalls	X
M-10(6)	Toxic Materials	X
M-10(7)	Roads and Pads	X
M-10(8)	Drainages	
M-10(9)	Structures and Equipment	
M-10(10)	Shafts and Portals	X
M-10(11)	Sediment Control	X
M-10(12)	Revegetation	X (mine area only)
M-10(13)	Dams	X
M-10(14)	Soils	

I believe a variance is justified on a site-specific basis for the previous subsections of Rule M-10 as indicated. A narrative statement explaining these concerns is attached.

STATE OF UTAH

COUNTY OF TOOELE

I, TOM S. SAUNDERS, having been duly sworn depose and attest that all of the representations contained in the foregoing application are true to the best of my knowledge; that I am authorized to complete and file this application on behalf of the Applicant and this application has been executed as required by law.

Signed: Tom S. Saunders

Taken, subscribed and sworn to before me the undersigned authority in my said county, this 1 day of August, 1984.

Notary Public: Dandy Murdock

My Commission Expires: 11/20/85

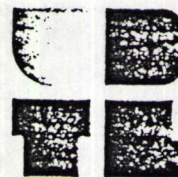
PLEASE NOTE:

Section 40-8-13(2) of the Mined Land Reclamation Act provides for maintenance of confidentiality concerning certain portions of this report. Please check to see that any information desired to be held confidential is so labeled and included on separate sheets or maps.

Only information relating to the location, size or nature of the deposit may be protected as confidential.

Confidential Information Enclosed: (☒) Yes () No

June 12, 1984



UBTL
520 WAKARA WAY
SALT LAKE CITY,
UTAH 84108
801 581-8267

ANALYTICAL REPORT

SUBMITTED TO: D. L. Whiting

SUBMITTED BY: Clint Merrell

REFERENCE DATA:

Analysis of: Sodium, Calcium, Magnesium

Identification No. 84-1568

Sample(s): 12 Analyses: 36

UBTL Laboratory No.: CE 10912 through CE 10923

The above numbered samples were made ready for analysis by weighing a portion, about one-fourth gram, and digesting for metals with nitric and perchloric acids. The digests were brought to a final volume of 25 mL with D. I. water.

The above numbered samples were analyzed according to "EPA-600/4-79-020 Methods of Chemical Analysis of Water and Wastes."

The limits of detection and method numbers according to the above reference are as follows:

<u>Analyte</u>	<u>LOD (Soil)</u>	<u>Method No.</u>
Sodium	100 µg/gm	273.1
Calcium	10 µg/gm	215.1
Magnesium	1 µg/gm	242.1

The results are tabulated on the following page(s).

Clint Merrell
Clint Merrell

Rand Potter
Rand Potter

June 13, 1984

ANALYTICAL REPORT

SUBMITTED TO: D. L. Whiting

SUBMITTED BY: Dave Gayer

REFERENCE DATA:

Analysis of: Inorganic Parameters

Identification: 84-1568

Sample(s): 12 Analyses: 24

UBTL Laboratory No.: CE 10912 through CE 10923

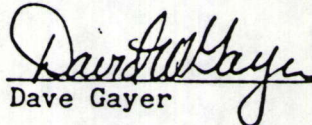
UBTL
520 WAKARA WAY
SALT LAKE CITY,
UTAH 84108
801 581-8267

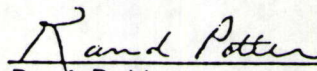
The above-numbered soil samples were analyzed in accordance with "EPA Methods for the Chemical Analysis of Water and Waste". EPA 600/2-78-054.

The EPA Method number according to the above reference and the limit of detection (L.O.D.) are as follows:

<u>Parameter</u>	<u>EPA Method</u>	<u>L.O.D.</u>
pH	3.2.2	0.1 unit
Specific Conductivity	3.2.18	1 μ mho/cm

The results are tabulated on the following pages.


Dave Gayer


Rand Potter

June 13, 1984

ANALYTICAL REPORT

SUBMITTED TO:

D. L. Whiting

SUBMITTED BY:

A. Brent Torgensen

REFERENCE DATA:

Analysis of:

Hydrometer test, Sieve Analysis

Identification:

84-1568

Sample(s): 12

Analyses: 24

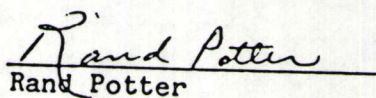
UBTL Laboratory No.:

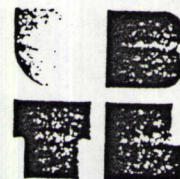
CE 10912 through CE 10923

The above numbered soil samples were analyzed for the sieve analysis according to ASTM Method No. C-136 and for the hydrometer test according to ASTM Method No. D-422.

The results are tabulated on the following page(s).


Brent Torgensen


Rand Potter



UBTL
520 WAKARA WAY
SALT LAKE CITY,
UTAH 84108
801 581-8267

MEDICINE
BIOENGINEERING
CHEMISTRY
RESEARCH
DEVELOPMENT
ANALYSIS



ANALYTICAL REPORT FORM

Date 6/18/84

UBTL Identification Number 84-1568

Corporate/Agency Name CH2M Hill

Address 187 Wright Brothers Drive

Salt Lake City, Utah 84122

Attention D.L. Whiting

Telephone 537-0070

Sampling Collection and Shipment

Sampling Site _____ Date of Collection _____

Date Samples Received at UBTL May 30, 1984

Analysis

Method of Analysis Asp - AAS

Date(s) of Analysis 6-8-84

Analytical Results

Field Sample Number	UBTL Lab Number	Sample Type	Mg/gm.	mg/liter/cm	Results	
			SODIUM	CALCIUM	MAGNESIUM	(umhos/cm) CONDUCTIVITY
19	CE 10900	12 s:ils FILTER	290.	50,000.	12,000.	370.
20	CE 10901	13	310.	50,000.	13,000.	280.
21	CE 10902	14	310.	80,000.	11,000.	240.
22	CE 10903	15	110.	18,000.	19,000.	270.
23	CE 10904	16	180.	150,000. 74,000 cm	18,000.	290.
24	CE 10905	17	370.	150,000.	16,000.	680.
25	CE 10906	18	420.	44,000	14,000.	300.
26	CE 10907	19	<100.	170,000.	17,000.	150.
27	CE 10908	20	130.	150,000.	25,000.	180.
28	CE 10909	21	210.	140,000.	16,000.	180.
29	CE 10910	22	160.	150,000.	18,000.	200.
30	CE 10911	23 ↓	180.	130,000.	19,000.	450.

Comments LOD 1 mg/liter/cm 10 µg/gm 1 µg/gm h (umhos/cm)
100 µg/gm

Clint Messell David Whiting
Analyst

A. Bunt
Laboratory Supervisor



ANALYTICAL REPORT FORM

Date 6/18/84

UBTL Identification Number 84-1568

Corporate/Agency Name CH2M-Hill

Address 187 Wright Brothers Drive

Salt Lake City, Utah 84122

Attention D.L. Whiting Telephone _____

Sampling Collection and Shipment

Sampling Site _____ Date of Collection _____

Date Samples Received at UBTL May 30, 1984

Analysis

Method of Analysis ASTM

Date(s) of Analysis 6/12/84

Analytical Results

Field Sample Number	UBTL Lab Number	Sample Type	Results		
			units PH	SIEVE ANALYSIS	HYDROMETER TEST
19	CE 10900	2 scils FILTER	7.9	*	*
20	CE 10901	13	7.9	*	*
21	CE 10902	14	8.1	*	*
22	CE 10903	15	8.2	*	*
23	CE 10904	16	8.0	*	*
24	CE 10905	16	9.1	*	*
25	CE 10906	18	8.1	*	*
26	CE 10907	19	8.2	*	*
27	CE 10908	20	8.1	*	*
28	CE 10909	21	8.1	*	*
29	CE 10910	22	8.2	*	*
30	CE 10911	23 ✓	8.1	*	*

LOD 10.1 units
Comments * See Attached Sheet for Data

Analyst

Reviewer

Laboratory Supervisor

[illegible]

Hydrometer Test

Specific Gravity
gms/cc

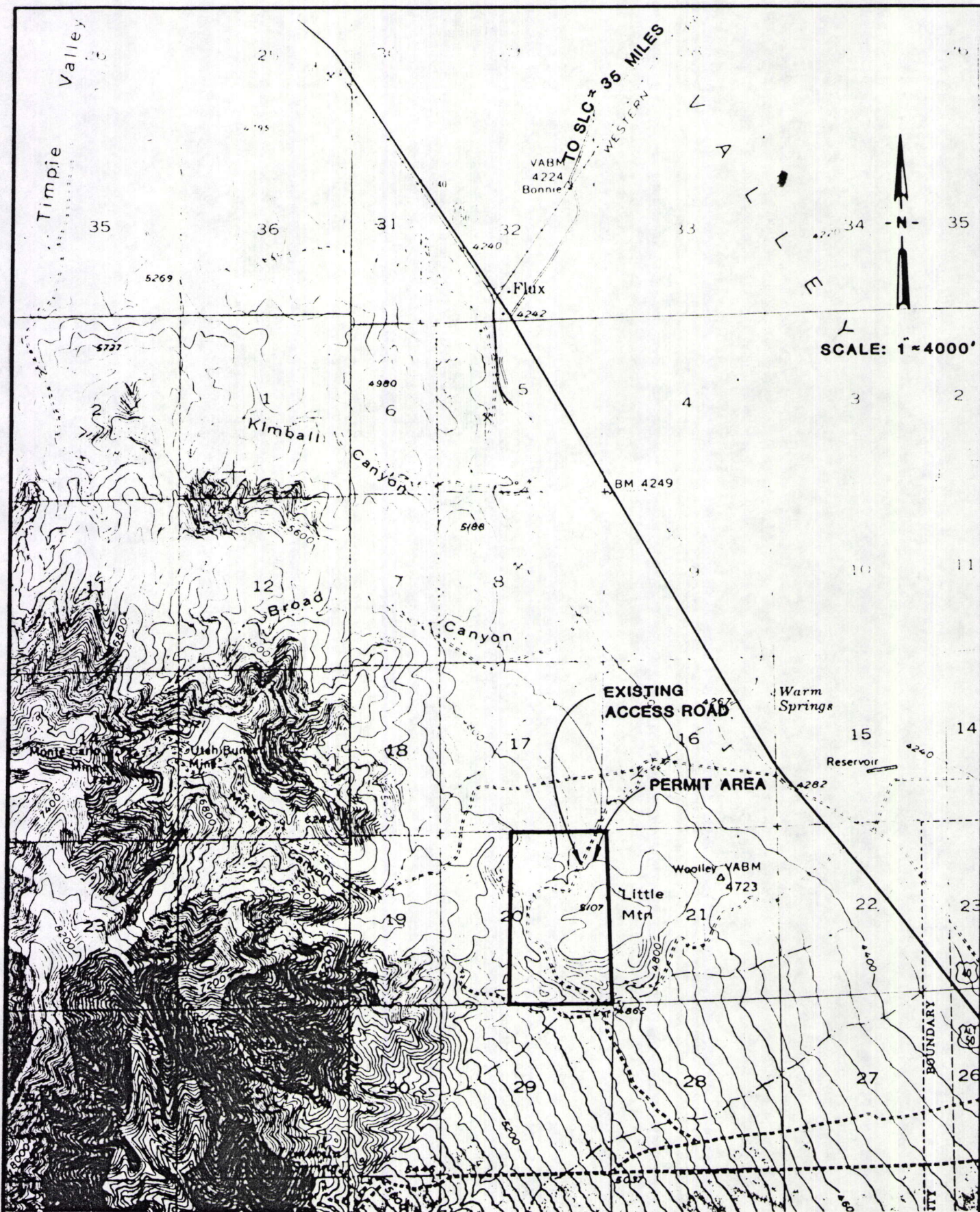
2	5	15	30	60	750	1440	5.0	5.5	7.1	7.1	2.1	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6
m.m	m.m	m.m	m.m	m.m	m.m	m.m	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
17	14	12	10	8.5	6.5	5.0	8	7	5.5	5.5	2.1	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6
22	17	14	12	11	8	5.5	8	7	5.5	5.5	2.1	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6
23	17	13	11	9	7	5.5	8	7	5.5	5.5	2.1	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6
11	8	7.5	6	5.5	5	4.5	5	4.5	4.5	4.5	2.4	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6
11	8	6.5	6	5	4.5	4.5	5	4.5	4.5	4.5	2.4	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6
10	6.5	6	5.5	4.5	4.5	4.5	5	4.5	4.5	4.5	3.0	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6
15	12	9	7.5	7	5.5	5	5	4.5	4.5	4.5	2.3	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6
8	7	5.5	5	5	4.5	4.5	5	4.5	4.5	4.5	2.3	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6
9	7.5	6.5	5.5	5.5	5	4.5	5	4.5	4.5	4.5	2.3	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6
10	8	7	6.5	6.5	6	5	5	4.5	4.5	4.5	2.3	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6
9	7.5	6	5.5	5.5	5	4.5	5	4.5	4.5	4.5	2.3	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.6

Note: ASTM Method No. D-422 Colls for a Hydrometer Number 151H, This Hydrometer was available so we used 111H

TABLE 1
ESTIMATED COSTS FOR RECLAMATION SCHEDULE
LITTLE MT. QUARRY, TOOELE, COUNTY
(REF: Item 27, Form MR-1)

<u>Item</u>	<u>Description</u>	<u>Est. Cost (1984 \$)</u>
27 A.	Cleanup/removal Structures	\$2,500
B.	Backfill, grading contouring	6,800
C.	Topsoil redistribution	4,800
D.	Revegetation	7,500
E.	Labor (included in A-D)	--
F.	Safety and fencing	500
G.	Reseeding (no monitoring assumed)	<u>3,700</u>
	TOTAL	\$25,850

Note: We understand that the security guarantee bond will be based on the reclamation estimate, length of permit (10 years) and the 1984 interest rate of 6.78%.



Map 1

REF: USGS 15 MIN TIMPE QUAD (1955)

B18243.A0

PERMIT AREA LOCATION MAP
 UTA4 PORTLAND QUARRIES, INC.
 SALT LAKE CITY, UTAH



VARIANCE JUSTIFICATION STATEMENTS
Mining and Reclamation Plan Application
for
Utah Portland Quarries, Inc.

Rule M-10(3), Impoundments

The use of evaporation, tailings, water or sediment ponds are not planned at the mining site. All material piles, pads, equipment storage areas and roadways will be constructed as free draining and nonimpounding because of the coarse nature of the rock materials being handled. Reclamation of these areas will be as discussed in the permit application. Natural drainages exist on the site which show erosion potential but these areas will not be used for impoundments or otherwise disturbed by mining activities.

Rule M-10(4), Slopes

The resultant mine slopes will all be solid rock. No soil slopes will remain since very little soil cover exists over the steeply dipping formations. Therefore, because of the expected high stability and low erosion of the remaining rock formations there is no need to alter or eliminate the slopes.

Rule M-10(5), Highwalls

As evidenced in several other past mine sites in the area where similar mining techniques were used, the slope stability of the remaining rock highwalls is very high with no evidence of significant failure. Also, the effectiveness or feasibility of slope stability control under these conditions would be highly questioned. Therefore, no need is envisioned to alter or eliminate the remaining rock highwalls. Likewise, no reclamation is planned for the highwall since it will be solid rock.

Rule M-10(6), Toxic Materials

No toxic materials are believed to exist or will be generated during mining operations. Existing rock formations are limestone, dolomite, shale and sandstone. No metallic or other mineral deposits are known to exist on the site. No solvents, chemicals or other processes are to be used which are toxic or could produce toxic wastes.

Rule M-10(7), Roads and Pads

An existing dirt road passes through the site which provides access to the nearby canyons. A portion, about 1 mile, has been graded and will be used for mine access and be maintained

during the mining operation. Access to the canyons will still be possible during and after mining. Local mine site roads will be short and surfaced with crushed rock. Most traffic will be confined to the pad areas. Pads are also covered with crushed rock to minimize erosion and to establish working areas. Mine site roads and pads will be reclaimed by covering with a thin layer of topsoil and revegetated.

Rule M-10(10), Shafts and Portals

No shafts and portals exist at the site or are to be part of the planned mining operation. All mining is to be surface open-cut.

Rule M-10(11), Sediment Control

Because of the thin, approximately 6-inch thick, natural topsoil cover at the site, sediment control is not a problem in the mining area. Likewise, since little disturbance will result on adjacent areas, except where equipment and crushed limestone storage pads exists, no need for sediment erosion-control is envisioned. Control of on-site areas out of the mining area is likewise not required since no impacts from the mining activity will occur. Also, no sediment control will be necessary in the mined area after cessation of operations since only rock will remain.

Rule M-10(12), Revegetation

A variance is requested for revegetation only within the mined-out area, on the highwall, and on the used portion of the access road. Reasons for this request have been previously discussed.

Rule M-10(13), Dams

Because of the low area precipitation, less than 10 inches per year, absence of major surface drainages or perennial streams and lack of need for process water, no dams are planned for the operation. Runoff collecting in the quarry will seep immediately into the fractured rock. Likewise, runoff will be contained by seepage through the piles and pads.

SLC15/27



SPRING ON PATENTED LANDS IN SE $\frac{1}{4}$ SECTION 20



NATURAL EROSION CHANNEL ALONG DRAINAGE NE $\frac{1}{4}$ SECTION 20



NORTH - SOUTH VIEW OF EXISTING AND FUTURE MINING AREA LOOKING EAST



PAD AND EQUIPMENT STORAGE AREA - LOOKING WEST



QUARRY MINING AREA WITH BENCHES AND HIGH WALL - LOOKING EAST



ACCESS ROAD AND STOCKPILE -LOOKING SOUTH
(Note thin top soil cover)



STOCKPILE AND ACCESS ROAD - LOOKING WEST



FUTURE AREA TO BE MINED - OUTCROPS & THIN TOPSOIL COVER



OVERBURDEN WASTE PILE AND ACCESS ROAD LOOKING SE